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## ABSTRACT

This study investigated the effects of mother's distance and visual field on some attachment behaviors of children 21-36 months old. Subjects were 20 male and 20 female children, half of each sex being reared primarily at home and half primarily in day care. Each child was observed with his mother in an experimental setting for a total of 16 minutes in 4 conditions, with mother sitting far from (3-4 meters) or near to (1 meter) tethered toys and facing so that she could or could not see the toys. The child's physical position and behavior along several modalities were recorded at 2-second intervals. Findings suggest that 2-year-olds are aware of the mother's activities and that if contact with the mother is reduced children will initiate behaviors to reestablish that contact. Reduction in visual accessibility of the mother appears to be as important as reduction in proximity. These findings are related to others which stress the centrality of eye-contact in the attachment relationship. (Author/GO)

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MOTHER-INFANT ATTACHMENT:

THE IMPORTANCE OF MOTHER'S DISTANCE AND VISUAL FIELD

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#### ABSTRACT

The goal of the present study was to contribute to an understanding of the development of attachment behavior beyond infancy. Subjects were 20 male and 20 female children, 21-36 months, half of each sex being home reared and half from day care centers. Each child was observed with his mother in an experimental setting for a total of 16 minutes in four conditions, with the mother sitting far from or near to tethered toys, and facing so she could or could not see the toys. The child's physical position and behavior along several modalities were recorded at two-second intervals. Findings concerned the balance between attachment and exploration and the importance of vision in the constellation of attachment behaviors. Children played with the toys less, moved more, and moved faster when the mother was either far from or facing away from the toys. When the mother was far from the toys, children looked at her more; when she faced away from the toys, children touched her more. Verbal behavior was not affected by either the mother's distance from the toys or her visual field.

## MOTHER-INFANT ATTACHMENT:

### THE IMPORTANCE OF MOTHER'S DISTANCE AND VISUAL FIELD

Within the past decade, mother-infant attachment has become the focus of extensive research and theoretical analysis. Many of the studies have focused on the attachment behavior of infants in the first year of life (Ainsworth, Bell, & Stayton, 1971; Ainsworth, Bell, & Stayton, 1972; Ainsworth & Wittig, 1969). Recently, some investigators have noted that one area in need of further study is the development of attachment beyond infancy (Ainsworth, 1972). Accordingly, I carried out studies which examined the attachment behavior of two-year-old children. The focus of the studies was primarily on the balance between attachment and exploration, and the importance of vision in mother-child contact.

A pilot study indicated that children wanted to be in the mother's visual field (Carr, Dabbs, & Carr, in press). Therefore, the current study manipulated two aspects of maternal behavior: the distance of the mother from attractive toys, and the direction of her visual field, that is, whether or not she was facing the toys. Thus, it allowed for a direct comparison of the relative importance to the child of the mother's distance and visual field.

Two questions underlay the design:

1. If children are forced to choose between toys and contact with the mother, how will they resolve the conflict? Will they choose one over the other, remaining either close to the mother or close to the toys; or, will they move back and forth between the two, with a resulting increase in overall activity level?
2. Do children's contact-seeking behaviors interact in a compensatory manner, such that reduction in contact in one attachment mode results in an

increase in contact in another? And, as a corollary, do increased distance from and reduced visual contact with the mother elicit different types of compensatory responses from the children?

#### Method

Subjects. The subjects were 40 Caucasian, middle-class mother-child pairs contacted through friends of the senior author. The children, 20 males and 20 females, were equally balanced between those reared primarily at home and those in day care. The age ranged from 20 to 36 months, with a mean of 27.4 months.

Setting. The experimental setting, which is illustrated in Figure 1, was a 12 x 18 foot room, equipped with an observation window and a Minoita D-10 Super-8 movie camera with intervalometer. Four toys were tethered to a corner of the room away from the camera with one-meter lengths of plastic clothesline. Short index lines were marked around the edge of the room at two-decimeter intervals. These lines were later used in scoring the child's location from the projected film images.

Procedure. Each of the mother-child pairs remained in the experimental room for a total of 16 minutes, during which time the mother sat for four minutes in each of four positions. In the first position, the mother sat near to (1 metre) and facing the toys; in the second, she sat in the same location but facing away from the toys; in the third, she sat far from (3-4 metre) and facing the toys; and in the fourth, she sat in the same far location but facing away from the toys. The mother was instructed always to face forward but otherwise to interact with the child normally, that is, to talk with the child as she normally would and to hold the child if he asked to be picked up. The child was free to do as he wished--play with the toys, interact with the mother, or explore the room.

Observations were made by camera and by human observer. Children's behavior related to proximity to the mother, time in her visual field, and overall activity level were recorded by the camera set to film at a rate of one frame every two seconds. Verbal and visual behavior were recorded by an observer behind the two-way mirror. The observer pressed buttons on a control panel which operated three lights in the bottom of the camera's visual field. The lights, identifiable by color, represented: child looking at mother, child talking to mother, and mother talking to child.

Scoring involved the following procedure. First, the image of the experimental room taken from the 8mm film was rear-projected onto a screen through a sheet of plastic. Next, a grid was drawn on the plastic by connecting the lines of demarcation with a ruler. The resulting grid, which was trapezoidal in shape even though the room was actually rectangular, overlay each of the mother-child images as they appeared on the screen. Finally, the observations for each mother-child pair were projected onto the screen one frame at a time. An observer, seated at a computer terminal, recorded for each frame: the child's coordinates; whether the child was looking at, talking to, or touching the mother; whether the child was playing with the toys; and, finally, whether the mother was talking to the child. The raw data thus recorded for the 40 mother-child pairs was then entered into an especially written computer program which produced the dependent variables for each mother-child pair.

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## (PRESENTATION OF FILMS FOR 5 TYPICAL CHILDREN)

## Results and Discussion

The effect of the mother's distance and visual field on each of the dependent variables is summarized in Table 1. It appears that when children are faced with the choice between toys and mother, they attempt to maintain some contact with both. Thus, when the mother was seated either far from or facing away from the toys, children played with the toys less. They also increased their overall activity level, that is, they moved more and moved faster, perhaps in an attempt to resolve the conflict with which they were faced.

A comparison of the effect of the mother's distance and visual field shows that, when the mother was far from but facing the toys, children compensated by looking at her more, often while continuing to play with the toys. So long as they could see the mother, they did not necessarily move closer to her. However, when the mother faced away from the toys, regardless of whether she was seated far from or near to them, the children left the toys approximately half the time to move into her visual field. They also touched her more, but did not look at her more. The latter result may represent a need for additional stimulation that arose when the toys were no longer available, or for a need for reassurance in the face of what may have seemed like strange behavior on the part of the mother.

Verbal behavior was not affected by either the mother's distance or her visual field. This may be because two-year-old children are not particularly verbal; or it may be that children in this age group engage in contact behaviors preferentially, that is, physical and visual contact may be selected over verbal contact whenever possible.

Figure 2 is a three-dimensional computer map showing where children spent their time for each of the four conditions. The height of the peaks is directly proportional to the number of observations in each grid coordinate. The present authors feel this method of presenting these data is particularly effective since it allows a direct visual comparison of the differential effects of the mother's distance and visual field on the position of the child in the room for each of the four experimental conditions.

In conclusion, the results show that two-year-old children are aware of the mother's activities, and if contact is reduced, will initiate behaviors to reestablish that contact. When distances are small, as in the present study, reduction in visual accessibility appears as important, if not moreso, than reduction in proximity. This finding is in keeping with other studies which stress the centrality of eye-contact in the attachment relationship.

The present authors hope that the results of this study, as well as the methodology employed, will be helpful in future research on attachment behavior in young children.

#### References

- Ainsworth, M. D. S. Attachment and dependency: A comparison.  
In J. L. Gewirtz (Ed.), Attachment and dependency. Washington, D. C.: Winston, 1972.
- Ainsworth, M. D. S., & Wittig, B. A. Attachment and exploratory behavior of one-year-olds in a strange situation. In B. M. Foss (Ed.), Determinants of infant behavior. Vol. 4. New York: Barnes & Noble, 1969.
- Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. Individual differences in strange-situation behavior of one-year-olds. In H. R. Schaffer

(Ed.), The origins of human social relations. New York: Academic Press, 1971.

Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. Individual differences in the development of some attachment behaviors. Merrill-Palmer Quarterly of Behavior and Development, 1972, 18, 123-143.

Carr, S. J., Dabbs, J. M., Jr., & Carr, T. S. Mother-infant attachment: The importance of the mother's visual field. In press, Child Development (June, 1975).

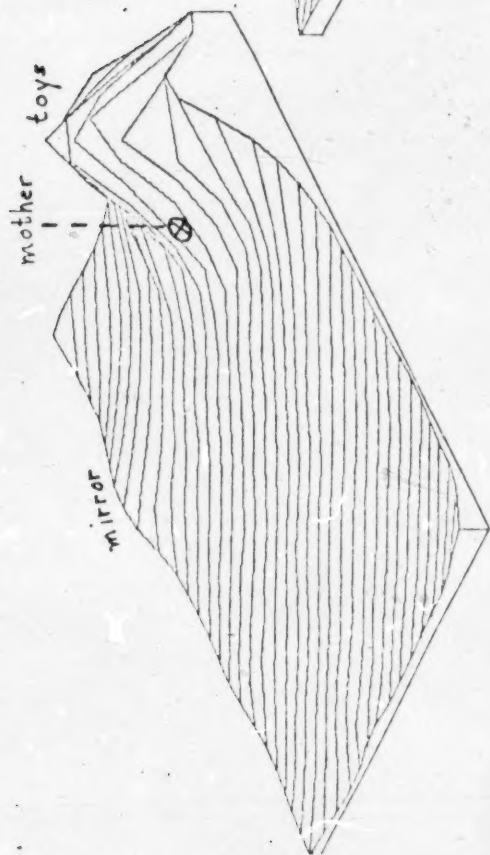
TABLE 1

The Effect of Mother's Distance from Toys and Visual Field on  
All Dependent Variables, Collapsed Across Sex and Type of Care

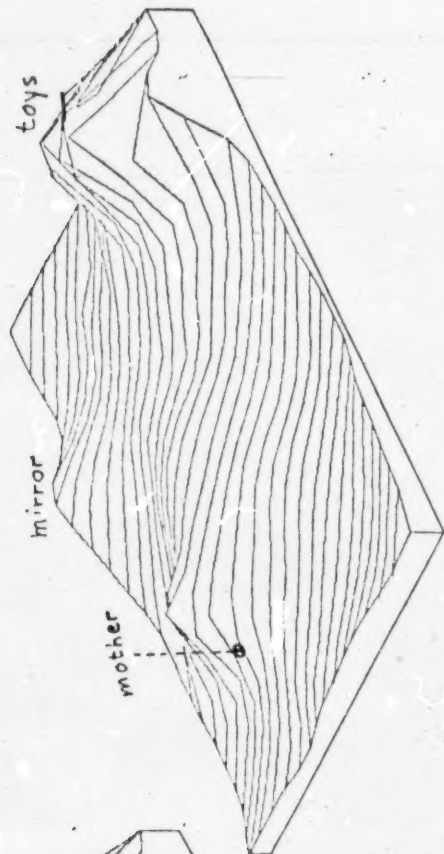
| <u>Dependent Variable</u>                             | <u>NEAR</u> |              | <u>FAR</u> |              | <u>F</u>        |            |              |
|-------------------------------------------------------|-------------|--------------|------------|--------------|-----------------|------------|--------------|
|                                                       | <u>See</u>  | <u>NoSee</u> | <u>See</u> | <u>NoSee</u> | <u>Distance</u> | <u>See</u> | <u>D x S</u> |
| Mean Distance from<br>Mother (meters)                 | 0.3         | 0.4          | 2.0        | 1.4          | 99.41**         | 4.04       | 27.47**      |
| Time Close to Mother<br>(percent within<br>one meter) | 83.4        | 76.3         | 18.3       | 33.1         | 13.11**         | -----      | 11.50**      |
| Time Touching Mother<br>(percent)                     | 12.9        | 23.8         | 15.3       | 27.8         | -----           | 16.10**    | -----        |
| Time Playing with<br>Toys (percent)                   | 73.4        | 46.9         | 55.0       | 41.6         | 8.64**          | 37.53**    | -----        |
| Time in Motion<br>(percent)                           | 18.0        | 26.0         | 27.4       | 28.4         | 6.14*           | 5.00*      | -----        |
| Rate of Movement<br>(meters/minute)                   | 12.5        | 14.3         | 15.2       | 17.6         | 6.20*           | 5.25*      | -----        |
| Child's Looking at<br>Mother (percent)                | 6.6         | 6.9          | 12.3       | 10.5         | 14.70**         | -----      | -----        |
| Child's Talking to<br>Mother (percent)                | 11.3        | 11.6         | 10.8       | 11.7         | -----           | -----      | -----        |
| Mother's Talking to<br>Child (percent)                | 11.6        | 10.0         | 10.6       | 10.5         | -----           | -----      | -----        |

\* =  $p > .05$

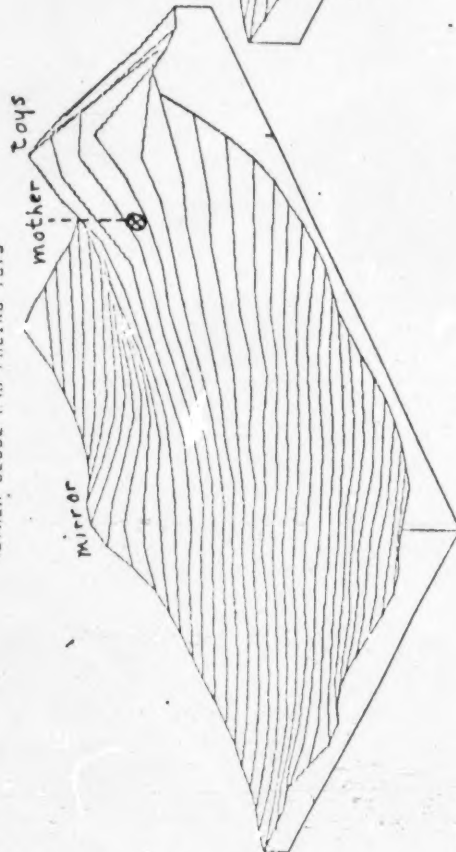
\*\* =  $p > .01$



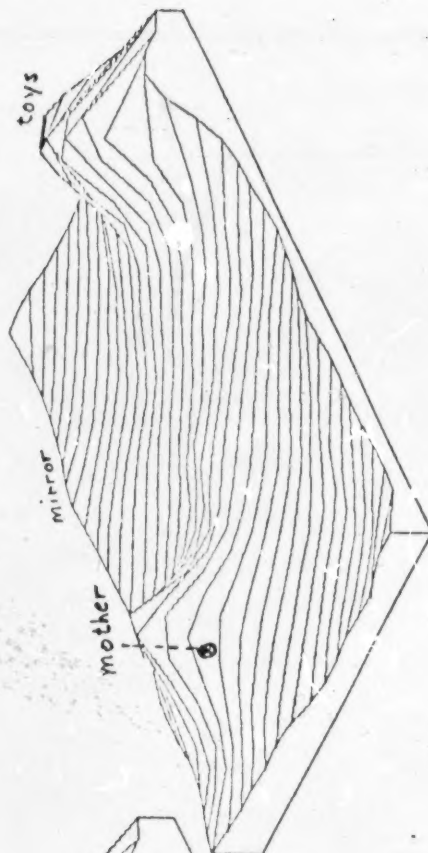
MOTHER, CLOSE AND FACING TOYS



MOTHER FAR AND FACING TOYS



MOTHER CLOSE AND FACING AWAY



MOTHER FAR AND FACING AWAY